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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,718	03/29/2004	Jon C. Taenzer	2023796-7036165001	3745
23639	7590	06/30/2005	EXAMINER	
BINGHAM, MCCUTCHEN LLP THREE EMBARCADERO CENTER 18 FLOOR SAN FRANCISCO, CA 94111-4067			LEE, PING	
		ART UNIT	PAPER NUMBER	2644

DATE MAILED: 06/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/812,718	TAENZER, JON C.	
	Examiner Ping Lee	Art Unit 2644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 18 October 2004.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 17-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 17-28 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>8/30/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 19 and 25 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 19 depends on claim 17. Claim 17 specifies the step of summing together to produce a directional signal. Claim 19 fails to further limit the invention as specified in claim 17 by specifying another step of summing together to produce multiple directional signals. It appears that claim 17 corresponds to the embodiment as shown in Fig. 22; while claim 19 intends to claim another embodiment as shown in Fig. 23. If that is applicant's intension, applicant should have two separate independent claims for each embodiment. Claim 25 has a similar defect.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the energy propagation barrier as specified in claims 17 and 23 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 17, 19, 21, 23, 24 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Greenberg et al ("Microphone-Array Hearing Aids with Binaural Output – Part II: A Two-Microphone Adaptive System").

Regarding claims 17, 19, 20, 23, 25 and 26, Greenberg et al (hereafter Greenberg) disclose a method of achieving directional pickup of sound signal and a

corresponding apparatus for implementing the method. Greenberg shows the first and second sensors (mL, mR), means for adjusting the amplitudes (adders or multipliers as shown in Fig. 2), means for summing together to produce a directional signal (the two adder as shown in Fig. 1).

Regarding claims 21 and 27, Greenberg shows the phase correction value for each band (the delay in Fig. 1 for low frequency and the delay in Fig. 2 for high frequency).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 17, 18, 23 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klootsema et al (US 6,697,494).

Regarding claims 17, 18, 23 and 24, Klootsema et al (hereafter Klootsema) disclose an apparatus and a corresponding method for achieving directional pickup of sound comprising a first and second sensors (3a,3b) and means for summing together the signals to produce a directional signal (11); wherein the signals to be added are of approximately equal magnitude (see abstract).

Klootsema teaches amplitude adjusting for one microphone signal (p in 8), but fails to show means for adjusting amplitudes of signals produced by the first and second sensors to produce adjusted signals. The idea of adjusting the amplitude, as taught in Klootsema, is to match the levels of the two microphone signals. This goal could be achieved by adjusting one signal path (Klootsema teaches that) or adjusting two signal paths. By providing two separate adjustments for two inputs, the number of shifting performed by unit 8 could be reduced even when the two inputs have a huge level difference. Thus, it would have been obvious to one of ordinary skill in the art to modify Klootsema by providing means for adjusting the signals produced by the two sensors in order to speed up the processing.

8. Claims 21, 22, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Klootsema as applied to claims 17 and 23 above, and further in view of Brennan et al (US 6,240,192).

Regarding claims 21 and 27, Klootsema teaches phase correction value ( $\tau$ ), but fails to show the phase correction value for each of multiple frequency bands. Brennan

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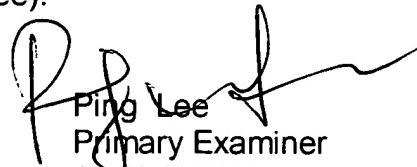
teaches that amplitude and phase corrections could be performed for multiple frequency bands individually in order to provide flexible processing. Thus, it would have been obvious to one of ordinary skill in the art to modify Klootsema in view of Brennan by separately correct the phase in multiple frequency bands in order to more accurately and efficiently generated the signal for a hearing aid.

Regarding claims 27 and 28, although Klootsema fails to show how to derive the phase correct value, the phase correction value inherently represents the difference between the signals from first and second sensors. Therefore, it would have been obvious to one of ordinary skill in the art to derive phase correction value for each frequency band by finding the difference between the signals from first and second sensors in each band.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ping Lee  
Primary Examiner  
Art Unit 2644

pwl